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**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

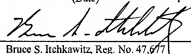
Applicant : Denney et al.  
App. No : 10/690,833  
Filed : October 22, 2003  
For : LASER HEAD FOR IRRADIATION  
AND REMOVAL OF MATERIAL  
FROM A SURFACE OF A  
STRUCTURE  
Examiner : Elve, Maria Alexandra  
Art Unit : 1793

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Bruce S. Itzhkowitz, Reg. No. 47,677**PRE-APPEAL BRIEF REQUEST FOR REVIEW****Mail Stop AF**

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

Dear Sir:

Applicants request a pre-appeal brief review of the legal and factual basis of the rejections in the January 11, 2008 Final Office Action. No amendments are being filed with this request, and this request is being filed with a notice of appeal.

This review is requested for the reason(s) stated on the attached sheets.

### **REASONS FOR THE REQUESTED REVIEW**

In the January 11, 2008 Final Office Action, the Examiner rejected Claims 1-22 under 35 U.S.C. § 103(a) as being unpatentable over a combination of prior art references.

#### **Response to Rejection of Claims 1-22 Under 35 U.S.C. § 103(a)**

In the January 11, 2008 Final Office Action, the Examiner rejects Claims 1-22 under 35 U.S.C. § 103(a) as being unpatentable over Uraki et al. (U.S. Patent No. 5,977,515) ("Uraki") in view of Otsubo et al. (U.S. Patent No. 6,507,000) ("Otsubo"), Freiwald (U.S. Patent No. 6,693,255) ("Freiwald") and DiCurcio (U.S. Patent No. 3,369,101) ("DiCurcio"). In view of the following discussion, Applicants respectfully traverse this rejection.

#### **Claims 1-22 Are Not Obvious in View of Uraki, Otsubo, Freiwald, and DiCurcio**

##### **The Combination Of Uraki, Otsubo, Freiwald, And DiCurcio Does Not Disclose The Laser Head Recited By Claims 1-22**

Applicants submit that the combination of Uraki, Otsubo, Freiwald, and DiCurcio does not disclose or suggest all the features recited by Claims 1-22 of the present application.

Uraki discloses an underwater laser system which comprises a plenum that isolates a dry, gas-filled region (in which the laser beam is able to propagate) from a surrounding water-filled region (Uraki, col. 8, lines 21-31). Uraki does not disclose or suggest that the plenum is "cooled by a cooling medium flowing through a coolant conduit," as recited by Claim 1.

Otsubo discloses a dust collector which requires a gap (Otsubo, col. 2, lines 57-58) between the dust collector and the workpiece to draw ambient air into the dust collector from outside the dust collector (Otsubo, col. 3, lines 42-43). Otsubo does not disclose or suggest that the dust collector is "cooled by a cooling medium flowing through a coolant conduit," as recited by Claim 1.

Freiwald discloses a cleaning head having a flow assembly in proximity to the surface being irradiated and an optics assembly upstream from the flow assembly (Freiwald, col. 6, lines 19-24 and Figures 2A, 2B, 3A, and 3B). The flow assembly allows the flow of ambient air to enter a nozzle from outside the cleaning head to cool the ablated material (Freiwald, col. 5, lines 40-44). Freiwald does not disclose or suggest that the ambient air cools the flow assembly and does not disclose or suggest that the flow assembly is "cooled by a cooling medium flowing through a coolant conduit," as recited by Claim 1. In addition, while Freiwald discloses that the

reflective optics (e.g. mirrors) of the optics assembly upstream from the flow assembly may be water-cooled (see, e.g., Freiwald, col. 8, lines 48-49), Freiwald does not disclose or suggest water-cooling the flow assembly.

DiCurcio discloses cooling a flash lamp and laser rod within an optical cavity using cooling gas from a cooling conduit (DiCurcio, col. 4, lines 25-28). However, DiCurcio does not disclose or suggest a containment plenum as recited by Claim 1 and does not disclose or suggest cooling other system components beyond the flash lamp and laser rod. Therefore, DiCurcio does not disclose or suggest a containment plenum that is "cooled by a cooling medium flowing through a coolant conduit," as recited by Claim 1.

Therefore, Applicants submit that the combination of Uraki, Otsubo, Freiwald, and DiCurcio does not disclose or suggest a "containment plenum ... cooled by a cooling medium flowing through a coolant conduit of the containment plenum" as recited by Claim 1. Similarly, Applicants submit that the combination of Uraki, Otsubo, Freiwald, and DiCurcio does not disclose a "confining means ... cooled by a coolant medium flowing through a cooling conduit of the confining means" as recited by Claim 19. Therefore, Claims 1 and 19 are patentably distinguished over the cited prior art references.

Claims 2, 12, 14, 15, 17, 18, 20, 21, and 22 depend from Claim 1. Claims 3, 4, and 5 depend from Claim 2. Claims 6 and 7 depend from Claim 5. Claims 8, 9, 10, and 11 depend from Claim 7. Claim 13 depends from Claim 12. Claim 16 depends from Claim 15. Thus, each of Claims 2-18 and 20-22 includes all the features of Claim 1 as well as other features of particular utility. Therefore, Claims 2-18 and 20-22 are also patentably distinguished over the cited prior art references. For at least the reasons stated above, Applicants respectfully request the Examiner withdraw the rejection of Claims 1-22 and pass these claims to allowance.

It Would Not Be Obvious To Combine Uraki And DiCurcio

In the January 11, 2008 Final Office Action, the Examiner states that it would have been obvious to one of ordinary skill in the art at the time of the invention to use a cooling conduit as taught by DiCurcio in the Uraki et al. system because "it is merely a part of the cooling system." However, Applicants submit that there is no suggestion or motivation to combine these two references. DiCurcio discloses a cooling conduit for cooling of an optical cavity to counteract heat generated by a flash lamp and laser rod within the optical cavity (DiCurcio, col. 4, lines 25-28). However, in Uraki, the optical cavity containing a heat-generating laser light generator is

spaced well away from the containment plenum (see, e.g., Uraki, Figures 1, 2, 7, 8). Therefore, utilizing the cooling conduit disclosed in DiCurcio to cool the optical cavity of the Uraki system would not provide cooling of the containment plenum. Furthermore, neither Uraki nor DiCurcio (nor Otsubo or Freiwald) disclose that the containment plenum is exposed to sufficient heat to warrant cooling using cooling conduits, and persons skilled in the art would not expect such cooling to be useful. Thus, there is no motivation for persons skilled in the art to modify the teaching of Uraki using the teaching of DiCurcio.

The Rejection Of Claims 1-22 Is The Result Of Improper Hindsight Since There Is No Motivation To Combine

The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggest the desirability of the combination. In re Mills, 916 F.2d 680, 16 U.S.P.Q.2d 1430 (Fed. Cir. 1990). There is no suggestion in the prior art, including in either Uraki, Otsubo, Freiwald, or DiCurcio, to combine the teachings of these four references by modifying the Uraki system to include cooling of the containment plenum using a coolant conduit. Without a teaching or suggestion in the prior art of the desirability of the combination, the Examiner's assertion that it would be obvious to one of ordinary skill in the art to make these combinations is an impermissible use of hindsight derived from the teachings of the present application. See, e.g., In re Dembiczak, 175 F.3d 994, 999 (Fed. Cir. 1999).

**Summary**

For at least the foregoing reasons, Applicants submit that Claims 1-22 are in condition for allowance, and Applicants respectfully request such action.

Please charge any additional fees, including any fees for additional extension of time, or credit overpayment to Deposit Account No. 11-1410.

Respectfully submitted,

KNOBBE, MARTENS, OLSON & BEAR, LLP

Dated: 2/29/08

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